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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/757,821

01/15/2004

Jung Ho Kang

20063/OG03-014

5400

34431

7590

04/17/2006

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EXAMINER

JEFFERSON, QUOVAUNDA

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/757,821

Applicant(s)

KANG, JUNG HO

Examiner

Quovaunda Jefferson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date March 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Numbers 20 and 40 are found on the drawing but not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al, US Patent 6,350,994 and Goto et al, US Patent Application Publication 2002/0105041. See Chang and Goto figures below.

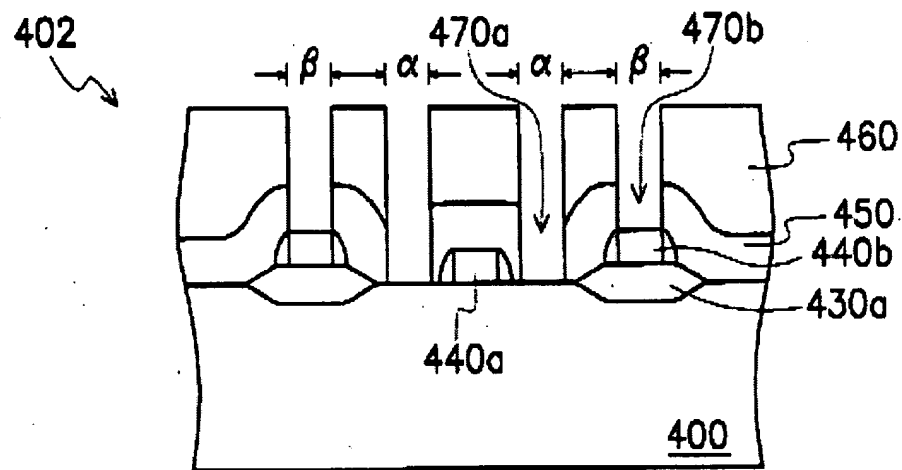


FIG. 4C

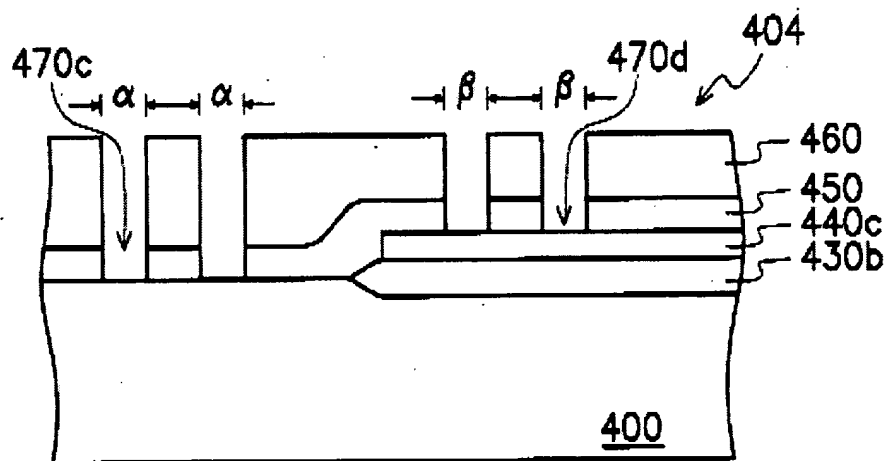


FIG. 5C

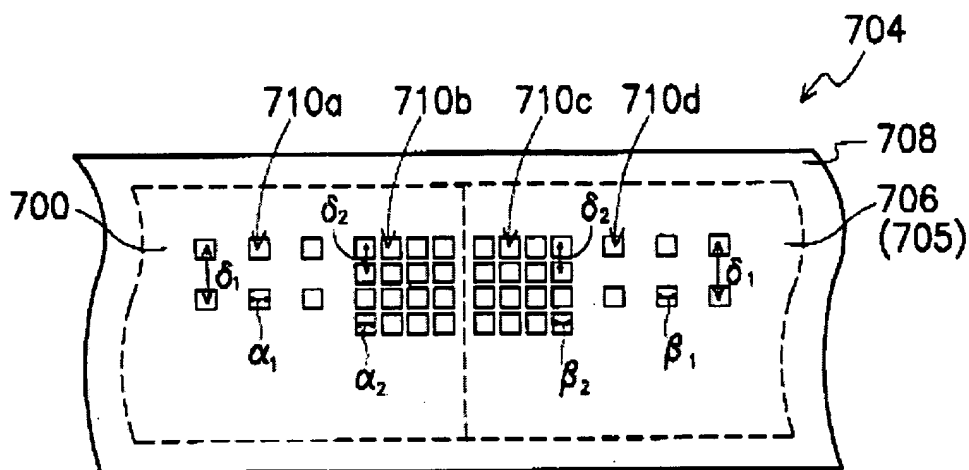
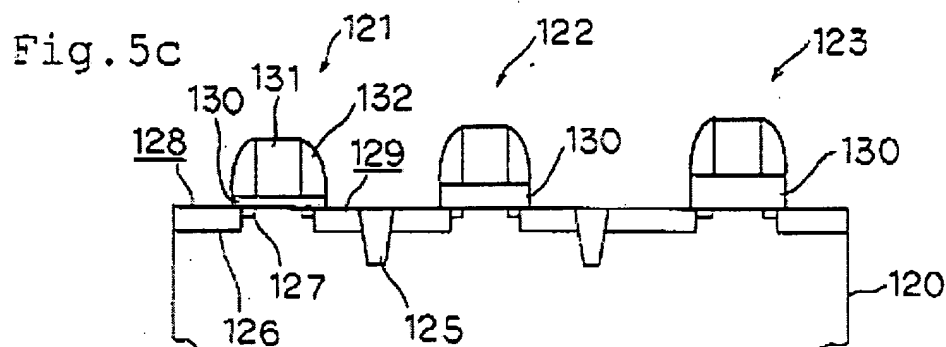


FIG. 7

CHANG FIGURES



GOTO FIGURE

Regarding claim 1, Chang teaches a method of making a monitoring pattern of a shallow trench isolation profile comprising of forming a first pattern **710a**, **710d** on a substrate to monitor a depth of a first shallow trench isolation and forming a second

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pattern **710b**, **710c** on the substrate to measure electrical effects associated with a depth and a profile of a second shallow trench isolation, wherein the second pattern includes a plurality of equally spaced active regions on the substrate

Chang fails to teach the first pattern includes a plurality of unequally spaced active regions on the substrate and a plurality of contact regions that electrically connect the equally spaced active regions. Goto teaches the first pattern includes a plurality of unequally spaced active regions on the substrate (Note: Goto teaches unequal active region since the source/drain, found in the active region of the substrate, are different sizes. The use of the spacing of the photoresist as taught in Chang with the device taught by Goto would meet this limitation as set forth) and a plurality of contact regions that electrically connect the equally spaced active regions (source and drain regions, which are well-known in the art). It would be obvious to one skilled in the art to combine the teachings of Goto with that of Chang because in an integrated circuit, third transistors having the thickest gate insulation film are driven at high voltage and thus operate at high speed with minimal gate leak current (Goto, abstract).

Regarding claim 2, Chang teaches the method as defined by claim 1, wherein the depth, the profile and the electrical effects are monitored according to density and size of the first and second patterns.

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Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al and Goto et al as applied to claim 1 above, and further in view of Brill et al, US Patent 6,650,424. Chang and Goto fail to teach the method as defined by claim 1, wherein the depth and the profiles are monitored using a single monitoring pattern. Brill teaches the depth and the profile are monitored using a single monitoring pattern (column 1, lines 24-30). It would have been obvious to one skilled in the art to combine the teachings of Brill with that of Chang and Goto because CD-SEM thus provides an accurate top view image allowing for extracting different lateral dimensions, such as line width (CD) (Brill, column 1, line 29).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quovaunda Jefferson whose telephone number is 571-272-5051. The examiner can normally be reached on Monday through Friday, 8AM to 4:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qvj



W. DAVID COLEMAN
PRIMARY EXAMINER